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10/039,035	01/04/2002	Nicholas P. Wilt	MSFT-0740/177740.01	2351
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WOODCOCK WASHBURN LLP (MICROSOFT CORPORATION)			EXAMINER	
CIRA CENTRE, 12TH FLOOR			DAO, THUY CHAN	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/039,035

Applicant(s)

WILT ET AL.

Examiner

Thuy Dao

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 August 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

1. This action is responsive to the amendment filed on August 31, 2007.
2. Claims 1-26 have been examined.

Response to Amendments

3. Per Applicants' request, claims 1, 9, and 18 have been amended.
4. The objection to drawing is withdrawn in view of Applicants' amendments. The Examiner acknowledges receipt of replacement drawing Fig. 5.

Response to Arguments

5. Applicants' arguments have been considered but are moot in view of the new ground(s) of rejection. Applicants' amendment necessitated the new ground(s) of rejection presented in this Office action

Claim Objections

6. Claims 9 and 18 are objected to because of minor informalities. The phrase in lines 4-6 is considered to read as - ...wherein said runtime [[instructions]] program performs the translation between said application [[instructions]] program and [[said]] a selected driver- - as previously recited in lines 3-4.

Appropriate correction is required.

Claim Rejections – 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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8. Claims 1, 6, 9-10, 15-16, 18-19, and 24-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Devins (art of record, US Patent No. 6,615,167) in view of US Patent No. 6,594,761 to Chow et al. (art made of record, hereinafter "Chow").

Claim 1:

Devins discloses *a computer system, comprising:*

a processor (e.g., FIG. 6, Embedded Processor 112, col.5: 46 – col.6: 31; FIG. 4, col.4: 56 – col.5: 27);

an operating system having a selected driver that interacts with a computing component (e.g., FIG. 6, Test Operating System TOS Kernel 600, col.5: 46-62; col.3: 6-31; col.4: 46-67; FIG. 4, col.4: 56 – col.5: 27);

a plurality of application instructions, said instructions readable by a compiler (e.g., Test Application 201, col.5: 62 – col.6: 4; FIG. 2B-C, col.4: 13-45);

a plurality of runtime instructions, said instructions readable by a compiler (e.g., FIG. 6, API 500, col.5: 28-44, col.6: 1-31; LLDD 202, col.3: 55-62, col.4: 22-45),

wherein said runtime instructions performs the translation between said application instructions and said selected driver (e.g., FIG. 2A, col.3: 55 – col.4: 12; FIG. 5, col.5: 29-45; FIG. 6, 201+202+601+602 → 500 → 400).

Devins discloses application instructions and runtime instructions as a combined set of instructions, but not explicitly disclose said instructions as intermediate language.

However, in an analogous art, Chow further discloses *an intermediate language compiler capable of compiling the application instructions and the runtime instructions into a combined set of instructions executable by the processor for interacting with the selected driver (e.g., col.6: 41-62; col.8: 4-13).*

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to combine Chow's teaching into Devins' teaching. One would have been motivated to do so to execute programs on different platforms as suggested by Chow (e.g., col.6: 41-62).

Claim 6:

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The rejection of claim 1 is incorporated. Devins also discloses *the plurality of application instructions and the plurality of runtime instructions are delivered to the computer system over a network* (e.g., FIG. 7, col.6: 32-66).

Claim 9:

Claim 9 is a method version, which recites the same limitations as those of the computer system claim 1, wherein all claimed limitations have been addressed and/or set forth above. Therefore, as the references teach all of the limitations of the above claim, they also teach all of the limitations of claim 9.

Claim 10:

The rejection of claim 9 is incorporated. Devins also *the driver program is compiled with the application program and the runtime program into the single executable program* (e.g., FIG. 4, col.4: 56 – col.5: 27).

Claims 15-16:

Claims 15-16 are method versions, which recite the same limitations as those of the claims 6-7, wherein all claimed limitations have been addressed and/or set forth above. Therefore, as the references teach all of the limitations of the above claim, they also teach all of the limitations of claims 15-16.

Claims 18-19 and 24-25:

Claims 18-19 and 24-25 are computer-readable medium versions, which recite the same limitations as those of claims 9-10 and 15-16, wherein all claimed limitations have been addressed and/or set forth above. Therefore, as the references teach all of the limitations of the above claim, they also teach all of the limitations of claims 18-19 and 24-25.

9. Claims 2, 8, 17, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Devins, Chow, and further in view of APA (art of record, Admitted Prior Art).

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Claim 2:

The rejection of claim 1 is incorporated. APA further discloses *the selected driver comprises a plurality of intermediate language instructions* (e.g., page 2: 24-26).

Claim 8:

The rejection of claim 1 is incorporated. APA also discloses *the intermediate language compiler comprises a Just-In-Time compiler* (e.g., page 2: 11-17).

Claim 17:

Claim 17 is a method version, which recites the same limitations as those of the claim 8, wherein all claimed limitations have been addressed and/or set forth above. Therefore, as the references teach all of the limitations of the above claim, they also teach all of the limitations of claim 17.

Claim 26:

Claim 26 is a computer-readable medium version, which recites the same limitations as those of claim 8, wherein all claimed limitations have been addressed and/or set forth above. Therefore, as the references teach all of the limitations of the above claim, they also teach all of the limitations of claim 26.

10. Claims 3-5 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Devins, Chow, APA, and further in view of Schmit (art of record, US Patent No. 6,148,438).

Claim 3:

The rejection of claim 2 is incorporated. Neither Devins nor Chow explicitly discloses *the selected driver is split into user mode and kernel mode instructions*.

However, in an analogous art, Schmit discloses *the selected driver is split into user mode and kernel mode instructions* (e.g., col.4: 14-28).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to combine the teaching of Schmit into that of Devins and

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Chow. One would have been motivated to do so to enable use of objects which comprise virtual function sin both user and kernel modes and reduce number of user mode/kernel mode transitions as suggested by Schmit (e.g., col.2: 19-36).

Claim 4:

The rejection of claim 3 is incorporated. Schmit further discloses *the user mode instructions of the selected driver translates from device driver interface instructions to hardware-specific commands* (e.g., col.5: 56-67; col.7: 56-62).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to combine the teaching of Schmit into that of Devins and Chow. One would have been motivated to do so to as set forth in claim 3 above.

Claim 5:

The rejection of claim 4 is incorporated. Devins also discloses *the selected driver writes hardware-specific commands into an operating system-allocated buffer for submission to a scheduler of the hardware's time* (e.g., FIG. 4, col.4: 56 – col.5: 27).

Claim 7:

The rejection of claim 2 is incorporated. Devins also discloses *the selected driver is delivered over a network* (e.g., FIG. 1, col.3: 6-54).

11. Claims 11-14 and 20-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Devins, Chow, and further in view of Schmit (art of record, US Patent No. 6,148,438).

Claim 11:

The rejection of claim 10 is incorporated. Schmit further discloses *the driver program comprises a kernel mode portion provided in an executable form* (e.g., col.4: 29-36).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to combine the teaching of Schmit into that of Devins and Chow. One would have been motivated to do so to as set forth above.

Claim 12:

The rejection of claim 11 is incorporated. Schmit further discloses *the driver program comprises a user mode portion provided in the intermediate language form* (e.g., col.4: 14-28).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to combine the teaching of Schmit into that of Devins and Chow. One would have been motivated to do so to enable use of objects which comprise virtual function sin both user and kernel modes and reduce number of user mode/kernel mode transitions as suggested by Schmit (e.g., col.2: 19-36).

Claims 13-14:

Claims 13-14 are method versions, which recite the same limitations as those of the claims 4-5, wherein all claimed limitations have been addressed and/or set forth above. Therefore, as the references teach all of the limitations of the above claim, they also teach all of the limitations of claims 13-14.

Claims 20-23:

Claims 20-23 are computer-readable medium versions, which recite the same limitations as those of the claims 11-14, wherein all claimed limitations have been addressed and/or set forth above. Therefore, as the references teach all of the limitations of the above claim, they also teach all of the limitations of claims 20-23.

12. Claims 1, 9, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Devins in view of Sato (art of record, "Fast Compiler Re-Targeting to Different Platforms by Translating at Intermediate Code Level" to Sato, IDS document filed January 4, 2002).

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Claim 1:

Devins discloses *a computer system, comprising:*

a processor (e.g., FIG. 6, Embedded Processor 112, col.5: 46 – col.6: 31; FIG. 4, col.4: 56 – col.5: 27);

an operating system having a selected driver that interacts with a computing component (e.g., FIG. 6, Test Operating System TOS Kernel 600, col.5: 46-62; col.3: 6-31; col.4: 46-67; FIG. 4, col.4: 56 – col.5: 27);

a plurality of application instructions, said instructions readable by a compiler (e.g., Test Application 201, col.5: 62 – col.6: 4; FIG. 2B-C, col.4: 13-45);

a plurality of runtime instructions, said instructions readable by a compiler (e.g., FIG. 6, API 500, col.5: 28-44, col.6: 1-31; LLDD 202, col.3: 55-62, col.4: 22-45),

wherein said runtime instructions performs the translation between said application instructions and said selected driver (e.g., FIG. 2A, col.3: 55 – col.4: 12; FIG. 5, col.5: 29-45; FIG. 6, 201+202+601+602 → 500 → 400).

Devins discloses application instructions and runtime instructions as a combined set of instructions, but not explicitly disclose said instructions as intermediate language.

However, in an analogous art, Sato discloses:

said instructions being in an intermediate language readable by an intermediate language compiler (e.g., FIG. 1, after being processed by Common Front-end, Source code becomes an intermediate language, page 924, section 3.2 Common Intermediate Language IL); and

an intermediate language compiler capable of compiling the application instructions and the runtime instructions into a combined set of instructions executable by the processor for interacting with the selected drive (e.g., FIG. 1, related text in page 924, left column: 39-54, MIPS compiler capable of compiling UCODE; wherein UCODE is the intermediate language produced from a C program, page 924, right column: 23-26).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to combine Sato's teaching into Devins' teaching. One would have been motivated to do so to provide an efficient solution of multiple targeting by

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translating at intermediate language (IL) level as suggested by Sato (e.g., page 923, col.1: 1-24, col.2: 24-32).

Claim 9:

Claim 9 is a method version, which recites the same limitations as those of the computer system claim 1, wherein all claimed limitations have been addressed and/or set forth above. Therefore, as the references teach all of the limitations of the above claim, they also teach all of the limitations of claim 9.

Claim 18:

Claim 18 is a computer-readable medium version, which recites the same limitations as those of claim 1, wherein all claimed limitations have been addressed and/or set forth above. Therefore, as the references teach all of the limitations of the above claim, they also teach all of the limitations of claim 18.

Conclusion

13. Applicants' amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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14. Any inquiry concerning this communication should be directed to examiner Thuy Dao (Twee), whose telephone is (571) 272 8570. The examiner can normally be reached on every Tuesday, Thursday, and Friday from 6:00AM to 6:00PM.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Q. Dam, can be reached at (571) 272 3695.

The fax phone number for the organization where this application or proceeding is assigned is (571) 273 8300.

Any inquiry of a general nature of relating to the status of this application or proceeding should be directed to the TC 2100 Group receptionist whose telephone number is (571) 272 2100.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

T. Dao



TUAN DAM
SUPERVISORY PATENT EXAMINER